

What is claimed is:

1. A liquid coating material which is curable with actinic radiation and is substantially or completely free from organic solvents and from corrosion-inhibiting pigments, comprising
 - (A) at least one constituent selected from the group consisting of low molecular mass, oligomeric, and polymeric organic compounds which contain at least one group which can be activated with actinic radiation, and also air-drying and oxidatively drying alkyd resins,
 - (B) at least one constituent selected from the group consisting of acidic esters of polyphosphoric acid and of monophosphoric acid with at least one compound (b1) containing at least one hydroxyl group and at least one group which can be activated with actinic radiation, and
 - (C) at least one kind of nanoparticles.
2. The coating material as claimed in claim 1, containing, based on its total amount, 1 to 10% by weight of organically bonded diphosphorus pentoxide.
3. The coating material as claimed in claim 1 or 2, characterized in that the low molecular mass organic compounds (A) are reactive diluents.

4. The coating material as claimed in any of claims 1 to 3, characterized in that the oligomeric or polymeric compounds (A) are oligourethanes or polyurethanes.
- 5 5. The coating material as claimed in any of claims 1 to 4, characterized in that the air-drying and oxidatively drying alkyd resin (A) has an oil length of 20 to 60%, based on the alkyd resin (A), 45 to 65 eq.% of the olefinically unsaturated double bonds present in the unsaturated fatty acid residues being conjugated.
- 10 6. The coating material as claimed in any of claims 1 to 5, characterized in that the group which can be activated with actinic radiation contains at least one bond which can be activated with actinic radiation.
- 15 7. The coating material as claimed in claim 6, characterized in that the actinic radiation is electromagnetic radiation or corpuscular radiation.
- 20 8. The coating material as claimed in claim 7, characterized in that the electromagnetic radiation embraces near infrared (NIR), visible light, UV radiation, X-rays, and gamma radiation and the corpuscular radiation embraces electron beams, proton beams, alpha radiation, beta radiation, and neutron beams.
- 25 9. The coating material as claimed in any of claims 1 to 8, characterized in that the bond which can be activated with actinic radiation is a carbon-carbon double bond and/or triple bond.

10. The coating material as claimed in claim 9, characterized in that the bond which can be activated with actinic radiation is a carbon-carbon double bond.
- 5 11. The coating material as claimed in any of claims 1 to 10, characterized in that the group which can be activated with actinic radiation is a (meth)acrylate group.
- 10 12. The coating material as claimed in any of claims 1 to 11, characterized in that the compounds (b1) are selected from the group consisting of cyclohexanedimethanol monoacrylate (CDMMA), tricyclododecanedimethanol monoacrylate (TDDMMA), and 4-hydroxybutyl acrylate.
- 15 13. The coating material as claimed in any of claims 1 to 12, characterized in that the nanoparticles (C) are selected from the group consisting of silicon dioxide and aluminum oxide.
- 20 14. The coating material as claimed in any of claims 1 to 13, containing, based on its total amount,
- 5 to 40%, preferably 10 to 35%, and in particular 15 to 30% by weight of at least one reactive diluent (A),
 - 25 - 5 to 40%, preferably 10 to 35%, and in particular 10 to 30% by weight of at least one oligomer and/or polymer (A), and
 - 5 to 40%, preferably 10 to 35%, and in particular 10 to 30% by weight of at least one alkyd resin (A).

15. The coating material as claimed in any of claims 1 to 14, containing, based on its total amount, constituent (B) in an amount of 10 to 50% by weight, preferably 15 to 45% by weight, and in particular 20 to 40% by weight.
- 5 16. The coating material as claimed in any of claims 1 to 15, containing, based on its total amount, nanoparticles (C) in an amount of 1 to 25% by weight, preferably 2 to 20% by weight, and in particular 3 to 15% by weight.
- 10 17. The coating material as claimed in any of claims 1 to 16, comprising at least one additive (D).
18. The coating material as claimed in claim 17, characterized in that the additive (D) is selected from the group consisting of epoxide
15 compounds, polyphosphoric acids, dryers, nonopaque organic and inorganic, colored and achromatic, optical effect, electrically conductive, magnetically shielding, and fluorescent pigments, antissettling agents, oligomeric and polymeric binders other than the constituents (A), UV absorbers, light stabilizers, free-radical
20 scavengers, photoinitiators, devolatilizers, slip additives, polymerization inhibitors, defoamers, emulsifiers and wetting agents, adhesion promoters, leveling agents, film formation auxiliaries, rheology control additives, and flame retardants, especially epoxide compounds and photoinitiators.
- 25 19. The coating material as claimed in claim 18, characterized in that the epoxide compounds (D) are aromatic epoxide compounds.

20. The coating material as claimed in claim 19, characterized in that the aromatic epoxide compounds (D) are selected from the group consisting of bisphenol A diglycidyl ether, bisphenol F diglycidyl ether, hydrogenated bisphenol A diglycidyl ether, hydrogenated
5 bisphenol F diglycidyl ether, and tricyclododecanedimethanol diglycidyl ether.
21. The coating material as claimed in any of claims 17 to 20, containing, based on its total amount, the epoxide compounds (D) in an amount of 1 to 20% by weight, preferably 5 to 17% by weight,
10 and in particular 5 to 15% by weight.
22. A process for preparing a coating material as claimed in any of claims 1 to 21 which comprises mixing at least constituents (A), (B), and (C) with one another and homogenizing the resulting mixture.
15
23. The use of a coating material as claimed in any of claims 1 to 21 or of a coating material prepared by means of the process as claimed in claim 22 to produce coil coatings.
- 20 24. The use as claimed in claim 23, characterized in that the coil coatings are firmly adhering corrosion-inhibiting primer coats.